

WHAT IS CLAIMED IS:

1. A sensor arrangement on a vehicle axle equipped with an air disc brake, comprising:
 - a wheel speed sensor; and
 - a sensor exciter, wherein
 - the sensor exciter is located on a rotor of the air disc brake,
 - the sensor is disposed adjacent to the exciter, such that the sensor is arranged to detect exciter motion.
2. The sensor arrangement of claim 1, wherein
 - the sensor exciter is located on the brake rotor adjacent to a junction of a friction portion of the brake rotor and a neck portion of the brake rotor.
3. The sensor arrangement of claim 2, wherein
 - the sensor exciter is formed integrally with the brake rotor.
4. The sensor arrangement of claim 2, wherein
 - the sensor exciter is formed as a ring and is attached to the rotor.
5. The sensor arrangement of claim 2, wherein
 - the sensor exciter is located on an extension of the neck portion of the brake rotor which extends axially from the junction of the friction portion and the neck portion toward a longitudinal center of the vehicle axle.

6. The sensor arrangement of claim 5, wherein
the sensor exciter is formed integrally with the neck portion extension.

7. The sensor arrangement of claim 5, wherein
the sensor exciter is formed as a ring and is attached to the neck portion
extension.

8. The sensor arrangement of claim 1, wherein
the sensor is located closer to a longitudinal center of the vehicle axle than
a neck portion of the brake rotor.

9. The sensor arrangement of claim 2, wherein
the sensor is located closer to a longitudinal center of the vehicle axle than
a neck portion of the brake rotor.

10. The sensor arrangement of claim 5, wherein
the sensor is located closer to a longitudinal center of the vehicle axle than
a hub portion of the brake rotor.

11. The sensor arrangement of claim 1, wherein
the sensor is located on an bracket which attaches a caliper of the air disc
brake to the vehicle axle.

12. The sensor arrangement of claim 2, wherein
the sensor is located on an bracket which attaches a caliper of the air disc
brake to the vehicle axle.

13. The sensor arrangement of claim 1, wherein
the wheel speed sensor is a component of an anti-lock braking system.

14. A vehicle axle assembly with an air disc brake and a sensor
arrangement, comprising:

a vehicle axle;

an air disk brake located adjacent to a hub end of the vehicle axle;

a wheel speed sensor; and

a sensor exciter, wherein

the sensor exciter is located on a rotor of the air disc brake,

the sensor is disposed on the vehicle axle adjacent to the exciter,

such that the sensor is arranged to detect exciter motion.

15. The vehicle axle assembly of claim 14, wherein
the sensor exciter is located on the brake rotor adjacent to a junction of a
friction portion of the brake rotor and a neck portion of the brake rotor.

16. The vehicle axle assembly of claim 15, wherein
the sensor exciter is formed integrally with the brake rotor.

17. The anti- vehicle axle assembly of claim 15, wherein
the sensor exciter is formed as a ring and is attached to the rotor.

18. The vehicle axle assembly of claim 15, wherein
the sensor exciter is located on an extension of the neck portion of the
brake rotor which extends axially from the junction of the friction portion and
the neck portion toward a longitudinal center of the vehicle axle.

19. A sensor exciter for use with a vehicle axle equipped with an air disc
brake, comprising:

a sensor exciter configured to generate an electrical signal in a wheel
speed sensor affixed to the vehicle axle,

wherein the sensor exciter is adapted to be located on a rotor of the air disc
brake in a position adjacent to the wheel speed sensor.

20. The sensor exciter of claim 19, wherein
the sensor exciter is located on the brake rotor adjacent to a junction of a
friction portion of the brake rotor and a neck portion of the brake rotor.

21. The sensor exciter of claim 20, wherein
the sensor exciter is formed integrally with the brake rotor.

22. The sensor exciter of claim 20, wherein
the sensor exciter is formed as a ring and is attached to the rotor.

23. The sensor exciter of claim 20, wherein
the sensor exciter is located on an extension of the neck portion which
extends axially from the junction of the friction portion and the neck portion
toward a longitudinal center of the vehicle axle.

24. A brake rotor, comprising:
a brake disc including a friction portion and a neck portion,
wherein a sensor exciter configured to generate an electrical signal in a
wheel speed sensor is located on the brake disc in a position adjacent to a
junction of a friction portion of the brake rotor and a neck portion of the brake
rotor.

25. The brake rotor of claim 24, wherein
the sensor exciter is formed integrally with the brake rotor.

26. The brake rotor of claim 25, wherein
the sensor exciter is formed as a ring and is attached to the rotor.

27. The brake rotor of claim 24, wherein
the sensor exciter is located on an extension of the neck portion which
extends from the junction of the friction portion and the neck portion axially
away from a hub end of brake disc.

28. A sensor mounting arrangement for use on a vehicle axle equipped with an air disc brake, comprising:

a wheel speed sensor; and

a torque plate for fixing a caliper of the air disc brake to the vehicle axle, wherein

the sensor is held by the torque plate between a brake caliper mounting portion of the torque plate and a vehicle axle attachment portion of the torque plate, and

a sensor exciter-detecting portion of the sensor is located at a position corresponding to a location of a sensor exciter arranged on a brake rotor of the air disc brake when the brake rotor is straddled by the brake caliper.

29. A sensor arrangement on a vehicle axle equipped with an air disc brake, comprising:

a wheel speed sensor;

a sensor exciter; and

an axle hub adapted to be rotatably supported on an outer end of the vehicle axle, wherein

the sensor is disposed on the vehicle axle at a location axially inboard of a rotor of the air disc brake,

the sensor exciter is located on an inwardly-extending portion of the rotating axle hub which extends towards a longitudinal center of the vehicle axle a distance sufficient to locate the sensor exciter within a range in which the sensor can detect exciter motion.

30. The sensor arrangement of claim 29, wherein
the sensor exciter is formed integrally with the inwardly-extending portion
of the rotating axle hub.

31. The sensor arrangement of claim 29, wherein
the sensor exciter is formed as a ring and is attached to the inwardly-
extending portion of the rotating axle hub.

32. The sensor arrangement of claim 29, wherein
the sensor is located on an bracket which attaches a caliper of the air disc
brake to the vehicle axle.

33. The sensor arrangement of claim 29, wherein
the wheel speed sensor is a component of an anti-lock braking system.

34. A vehicle axle assembly with an air disc brake and a sensor
arrangement, comprising:

a vehicle axle;

an air disk brake located adjacent to a hub end of the vehicle axle;

a wheel speed sensor;

a sensor exciter; and

an axle hub adapted to be rotatably supported on an outer end of the
vehicle axle, wherein

the sensor is disposed on the vehicle axle at a location axially inboard of a rotor of the air disc brake,

the sensor exciter is located on an inwardly-extending portion of the rotating axle hub which extends towards a longitudinal center of the vehicle axle a distance sufficient to locate the sensor exciter within a range in which the sensor can detect exciter motion.

35. The vehicle axle assembly of claim 34, wherein the sensor exciter is formed integrally with the inwardly-extending portion of the rotating axle hub.

36. The anti- vehicle axle assembly of claim 34, wherein the sensor exciter is formed as a ring and is attached to the inwardly-extending portion of the rotating axle hub.

37. A sensor exciter for use with a vehicle axle equipped with an air disc brake, comprising:

a sensor exciter configured to generate an electrical signal in a wheel speed sensor affixed to the vehicle axle,

wherein the sensor exciter is adapted to be located on an inwardly-extending portion of a rotating axle hub in a position adjacent to the wheel speed sensor.

38. The sensor exciter of claim 37, wherein
the sensor exciter is formed integrally with the inwardly-extending portion
of the rotating axle hub.

39. The sensor exciter of claim 37, wherein
the sensor exciter is formed as a ring and is attached to the inwardly-
extending portion of the rotating axle hub.